

Applicant: Laitinen, et al.
Application No.: 10/034,423
Art Unit: 3726

Remarks

Claims 8–14 remain pending in the application. Claims 1–7 and 15–18 have been canceled. In the Office action dated March 19, 2004, the claims 1–18 were objected to as containing informalities. Claims 1–3, 11, 12, 15, 17, 18, and 27 were rejected as unpatentable over *Miller* in view of *Takada et al.* Claim 4 was rejected as unpatentable over *Miller* in view of *Takada et al.* and further in view of *Flasche et al.*, claims 5–7 were rejected as unpatentable over *Miller* in view of *Takada et al.* and further in view of *Koivukunnas* and claims 13 and 14 were rejected as unpatentable over *Miller* in view of *Isometsä*. Claim 16 who was rejected as unpatentable over *Miller* in view of *Takada et al.* and further in view of *Tsujimura et al.* Claims 8–10 were indicated as allowable if rewritten to overcome the informalities noted by the examiner.

It is submitted that claims 13 and 14 should also be allowed because *Isometsä* (WO 00/58554) does not suggest *reducing* heat flow in the axial journal of a roll but rather how to *increase* heat flow in a roll surface. Claim 13 is limited to “a powder material that conducts heat more poorly than steel” which is “used at a selected depth in a region intended to be under a bearing”. *Isometsä* does not provide a suggestion of doing what applicant has done: reduce heat flow “in the axle journal of the roll end”. *Isometsa* teaches control of heat flow through the use of more conductive material, *Isometsa* teaches generally the well know principle that heat flow can be controlled by material conductivity, but more is need to render claim 13 obvious. Almost all inventions use known principles. Applicant’s invention cannot be assembled using hindsight to select know principles and structures. To properly perform the obviousness analysis, the person of ordinary skill must be placed at the time of the

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invention and be unaware of applicant's solution. It is from this vantage point, and only this vantage point, where the analysis starts. From there it is incumbent upon the examiner to provide convincing reasoning why the artisan would have found the claimed invention obvious. And more particularly, how the suggestion or motivation for combining references is also found within the prior art.

The examiner suggests as a motivation from *Isometsä* that a suggestion to make the roll lighter provides the motivation for using materials of different heat conductivity within the claimed roll. However the claim 13 is directed to a roll formed of steel powder, and there is no suggestion within the references to achieve applicant's advantage by the particular claimed placement of lower heat conducting material. Further there must be an expectation of success found within the prior art, utilizing the material suggested by *Isometsä* is not suggested for use in an "axle journal of the roll end" and there is no expectation that if the materials of *Isometsä* were used in the claimed location they would be successful at achieving applicant's claimed advantage, reduced heat flow. On the contrary, *Isometsä* teaches using lighter materials to *increase* heat flow.

Claim 14 more particularly claims powder material that is "a metal matrix composite". The specification gives "a metal matrix composite" as an example of a material providing the advantage of reduced heat flow to the bearing of the powder metal roll with a heated duct system. Thus applicant has disclosed that "a metal matrix composite" provides an advantage, and is used for a particular purpose and solves the stated problem i.e. reducing heat flow "in the axle journal of the roll end".

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What is not shown or suggested by the prior art is that the manufacture of an "axle journal of the roll end" out of powder metallurgy where the powder is selected reduces heat flow "at a selected depth in a region intended to be under a bearing".

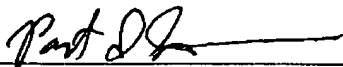
Claims 11-12 have been amended to depend directly or indirectly on allowed claim 8 and in combination with the limitations of claim 8 define patentable subject matter.

Applicant believes that no new matter has been added by this amendment.

Applicant submits that the claims, as amended, are in condition for allowance.

Favorable action thereon is respectfully solicited.

Respectfully submitted,



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